

# TSK 450-b: Analyzing Land Use Effects

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*Steps 3 through 9 Fig 450-1: Basic Land Use Analysis Process*

**See also:** EM Chapter 450, TSK 450-a

**Effective June 2012**

Source: *A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway Improvements*, 2001,

**Start task:** After study area is set and plans collected

**End task:** Completion of Land Use Analysis.

## **Step 1: Project Description**

- Collect design data from the Project Office (type and location of improvements & design standards)
- Purpose and Need

## **Step 2: Set Study Area**

- TSK 450-a: Establish Study Area
- Conduct field visit to familiarize yourself with existing conditions in the study area. Take a copy of the map created in TSK 450-a that includes the existing zoning information and a current air photo and make annotations about existing land use patterns. Pay particular attention to vacant or under-developed lots, businesses serving minority population (such as Asian markets), and existing infrastructure gaps (such as missing sidewalk) and potential Section 6(f) properties (such as pocket parks).
- Estimate areas of potential indirect land use effects and note them on the map created in TSK 450-a.

## **Step 3: Identify Basic Demand Drivers for Potential Change in Land Use**

- Consult with stakeholders, which include WSDOT, local city and/or county staff. Scale level and formality of consultation to match the level of complexity and controversy of the project.
- Obtain official long-range population and employment forecasts from local comp plans.
- Obtain relevant coordinated forecasts from the Metropolitan Planning Organization's or Regional Transportation Planning Organization's (MPO/RTPO) transportation plan if applicable.
- Obtain sub-area population and employment allocations. If no sub-area plan is available, review local travel demand model allocations by TAZ (Traffic Analysis Zone). If no model is available, discuss allocation with local jurisdiction staff.
- Document methods and assumptions regarding the use and geographic distribution of population and employment forecasts. Document the rationale behind the decision. This is a key element for a large, complex, and controversial project where legal challenges to the NEPA document are likely, and will become part of the project's Administrative Record.

#### **Step 4: Collect Land Use and Transportation Data**

- Gather and review the relevant comprehensive plans and subarea plans for jurisdictions within the study area.
- Consult with WSDOT and local city and/or county staff to obtain and analyze GIS data. Of particular interest are maps and tabular summaries of land use patterns, vacant lands, and the location of building permits issued within the past 10 years.
- Review the local land use capacity analysis (available vacant land and land that can be redeveloped to a higher density) within the study area. If a capacity analysis is not available use data collected in the field visit conducted in Step 2 and current air photos to estimate the land capacity assuming a land consumption rate of 100 acres per 1000 persons in urban areas.
- If possible, make estimates of development capacity in the study area. Interviews or focus group discussions with local realtors, developers, and bankers can help you to understand the development climate, particularly for redevelopment. Interviews with local staff may suffice for less complex and controversial projects.
- Evaluate the data in the context of the proposed improvement and study area boundaries. Consider observations made during the project drive through and input from local jurisdictions and stakeholders. Adjust the study area limits if needed.
- Document assumptions and the rationale for the assumptions.

#### **Step 5: Collect Relevant Public Policy**

- Gather and review relevant plans and policy documents for all jurisdictions within the study area. At a minimum include:
  - The land use and transportation elements of the local comprehensive plans.
  - Capital Improvement Plans and service extension policies.
  - Long-range water and sewer master plans.
  - Economic Development Plans.
  - Critical Areas, Resource Lands and Shoreline Master Plans.
  - Recreation, Trail and Park development and management plans.
- Evaluate the plans and policies to determine the factors that will potentially encourage or constrain future development in the study area regarding the following topics. Scale the level of detail of the review to match the level of complexity and controversy of the project.
  - Sewer and water availability and capacity. Depending on the project location, you may also need to consider the availability of other utilities such as electricity and telecommunications.
  - Jurisdictional constraints -- zoning and adopted density restrictions, city limits and UGA boundaries, protected lands, steep slopes, WSDOT Access Management Plans.
  - Vacant land and its zoning/designations/services (factors that encourage growth)
  - Land capacity and estimated year of build out (i.e., when a land will reach its planned capacity under current policies and growth forecasts).

- Recent and anticipated economic growth and development within the study area.
  - For large, complex and controversial projects consider recent and anticipated economic growth and development in the larger region along highways/major arterials in the project's travelshed
- Recent and anticipated transportation improvements in the study area and larger region.
  - Distinguish between Federal projects and non-federal projects and coordinate data collection with the biologist conducting the Section 7 Consultation.

**Step 6: Describe the No-Build Land Use Development Patterns**

- Carefully review the local land use plan, transportation plan, and capital investment plan to see if the proposed transportation project is included or assumed in any or all of the plans.
- If the plans include the project, determine whether the plan explicitly considered the project in the population and employment forecasts and future development patterns.
  - Talk to local jurisdiction staff if the plans are vague or conflicting.
- Make a determination of whether the development patterns envisioned in the plans include indirect impacts of the project.
  - **If so**, then the plan envisions a future that includes and may require the build alternative. In which case, the no-build alternative will likely cause LESS land use development than what is envisioned in the plan. Development may occur more slowly or in different areas.
  - **If not**, then the no-build alternative will most likely resemble the planned growth and the build alternative may have a greater impact, or cause development to occur more quickly or in different areas.
- Describe the likely development patterns in the absence of the transportation improvement.
  - Document assumptions, their source, and the rationale behind their selection.

**Step 7: Summarize and Incorporate "Other" Analysis**

- Meet with staff working on other technical reports.
  - Share assumptions used in the Land Use Analysis. Consider potential impacts to other analyses and resolve inconsistencies. If assumptions are modified, document the reasons for the changes and consequences.
  - Obtain preliminary results, of the transportation, right of way, and Relocation Report.
  - Incorporate relevant elements of the various technical reports into the indirect land use analysis and share results with pertinent disciplines.

**Step 8: Determine land Use Impacts of the Build Alternative**

- Describe the direct land use impacts.
- Use the table below to estimate the potential for indirect land use impacts.

**Table 1: Factors Affecting Indirect Land Use:**

This table is intended as a guide for determining the potential for indirect land use effects. Results should be tempered with professional judgment. Consultation with experienced staff from the local jurisdictions within the study area is recommended. If all other measures are “strong” and the system improvement variable is “weak” the indirect land use impacts will be less.

<b>Change Variable</b>	<b>Data Source</b>	<b>If value is . . .</b>	<b>The potential for land use change is probably . . .</b>
<b>System Improvement</b> Measured as change in travel time, delay, or Volume/Capacity (V/C)	<ul style="list-style-type: none"> <li>Travel Demand model</li> <li>Expert opinion or consultation with RTPD, MPO, or WSDOT staff</li> </ul>	<ul style="list-style-type: none"> <li>&lt;2 minutes for average trip, or no change in V/C</li> <li>2-5 minutes</li> <li>5-10 minutes</li> <li>&gt;10 minutes</li> </ul>	<ul style="list-style-type: none"> <li>None to very weak</li> <li>Weak to moderate</li> <li>Strong</li> <li>Very strong</li> </ul>
<b>Forecast growth</b> Measured as average annual growth rate for population and employment	<ul style="list-style-type: none"> <li>Official population &amp; employment forecasts.</li> </ul>	<ul style="list-style-type: none"> <li>Average annual growth rate &lt; 1%</li> <li>1% to 2%</li> <li>2% to 3%</li> <li>Over 3%</li> </ul>	<ul style="list-style-type: none"> <li>None to very weak</li> <li>Weak to moderate</li> <li>Strong</li> <li>Very Strong</li> </ul>
<b>Relationship between supply and demand</b> Measured as land supply.	<ul style="list-style-type: none"> <li>Planning documents</li> <li>Interviews with realtors, developers and local planners</li> </ul>	<ul style="list-style-type: none"> <li>More than 20-year supply of all land types</li> <li>10 to 20-year supply</li> <li>&lt;10-year supply</li> <li>&lt;10 year supply and specific identified problems in study area.</li> </ul>	<ul style="list-style-type: none"> <li>None to very weak</li> <li>Weak to moderate</li> <li>Strong</li> <li>Very strong</li> </ul>
<b>Availability of Utilities (Sewer/Water)</b> Measured as number of people/employees that can be served or barriers to service	<ul style="list-style-type: none"> <li>Local planning documents</li> <li>Interviews with local planners</li> <li>Other reports generated for project evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Key services not available and difficult to provide</li> <li>Not available and can be provided</li> <li>Not available, easily provided</li> <li>Available now</li> </ul>	<ul style="list-style-type: none"> <li>None to very weak</li> <li>Weak to moderate</li> <li>Strong</li> <li>Very strong</li> </ul>

<b>Other factors</b> that impact the market for development	<ul style="list-style-type: none"> <li>• Local planning documents</li> <li>• Social and Community Effects and ROW reports</li> <li>• Assessment data</li> <li>• Interviews with local staff</li> </ul>	<ul style="list-style-type: none"> <li>• Weak market for development</li> <li>• Weak to moderate market</li> <li>• Strong market</li> <li>• Very strong market</li> </ul>	<ul style="list-style-type: none"> <li>• None to very weak</li> <li>• Weak to moderate</li> <li>• Strong</li> <li>• Very Strong</li> </ul>
<b>Public Policy</b>	<ul style="list-style-type: none"> <li>• Local planning documents</li> <li>• Interviews with local officials, planners, and special interest groups.</li> </ul>	<ul style="list-style-type: none"> <li>• Strong policy, strong enforcement</li> <li>• Weak policy, weak enforcement.</li> <li>• No policy</li> </ul>	<ul style="list-style-type: none"> <li>• None to very weak</li> <li>• Moderate to strong</li> <li>• Very strong</li> </ul>

Table adapted from *A Guidebook for Evaluating the Indirect Land Use and Growth Impacts of Highway Improvements*, 2001, FHWA, ODOT, PSU, and ECONorthwest.

- Make a preliminary determination of the timing and extent of indirect land use impacts. The determination may include both beneficial and adverse impacts.
  - If adverse effects exist, describe potential mitigation measures. Your documentation will need to include the responsible party and likelihood of implementation.
- Determine the project’s potential to affect existing and future land use and affect land use.
  - Determine the magnitude of the potential effects and support with documentation.

**Step 9: Prepare Report**

- Document findings in environmental document as appropriate for the size and complexity of the project. If a discipline report is needed, use the Land Use checklist (this document can be found on the WSDOT Land Use web page).